

Claims

1. An injectable reversible contraceptive comprising a contraceptive polymer, a solvent medium, an electrically conducting material and a magnetic material, characterised in that said contraceptive polymer is from the hydrogel class of polymers, particularly a mixture of styrene maleic anhydride copolymer and styrene maleic acid copolymer, and said solvent medium is dimethyl sulphoxide solvent, and said electrically conducting material is copper in its pure form essentially consisting of microsize particles and macrosize particles, and said magnetic material is iron in its pure form essentially consisting of microsize particles and macrosize particles.
2. A contraceptive as claimed in claim 1, wherein styrene maleic acid copolymer and styrene maleic anhydride copolymer are taken in the ratio varying between 1.5:8.5 to 3:7, preferably 2:8 with respect to each other.
3. Deleted.
4. A contraceptive as claimed in claim 1, wherein said magnetic material is iron in the form of oxide or a combination with a biologically accepted material, like sulphur, essentially consisting of microsize particles and macrosize particles.
5. A contraceptive as claimed in claim 1, wherein said electrically conducting material and said magnetic material each varies between 3 to 20% by weight of said contraceptive polymer.
6. A contraceptive as claimed in claim 5, wherein said electrically conducting material is taken between 3-8%, preferably between 4-6%, more preferably about 5% by weight of said contraceptive polymer.
7. A contraceptive as claimed in claim 5, wherein said magnetic material is taken between 6-15%, preferably between 8-12%, more preferably about 10% by weight of said contraceptive polymer.
8. A contraceptive as claimed in claim 1, wherein particle size of said microsize particles of said electrically conducting material is about 0.005 to 20 μ , preferably about 0.5 to 15 μ and of said macrosize particles of said electrically conducting material is about 150 μ to 0.2mm.
9. A contraceptive as claimed in claim 1, wherein particle size of said microsize particles of magnetic material is about 0.005 to 15 μ , preferably about 0.5 to 15 μ and of said macrosize particles of magnetic material is upto 0.5 mm.

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10. A contraceptive as claimed in claim 1, wherein said microsize and macrosize particles of said electrically conducting material are taken approximately in equal amounts by weight.
11. A contraceptive as claimed in claim 1, wherein said microsize particles of said magnetic material are taken in lower amount as compared to said macrosize particles of said magnetic material.
12. A contraceptive as claimed in claim 1, wherein for every 100 mg of said contraceptive polymer about 200 μ l of said solvent is taken.
13. A contraceptive as claimed in claim 1, wherein said magnetic material is prevented from aggregation by suitable coating.
14. A contraceptive as claimed in claim 13, wherein said magnetic material is coated with cross-linked styrene maleic anhydride copolymer.
15. A contraceptive as claimed in claim 1, characterised in that the removal of the contraceptive is achieved by external magnetic field, preferably travelling magnetic field or alternately by flushing by another injection of the said solvent.
16. A contraceptive as claimed in claims 1 or 15, characterised in that the contraceptive is heated by electromagnetic induction with fields from outside the body, which in-turn causes lowering in viscosity of said contraceptive to effect the reversal thereof.
17. A contraceptive as claimed in claim 1, characterised in that the *in-situ* flow of the contraceptive after injection is controlled by external means, preferably by the application of a drag force or a propelling force by means of an external magnetic field.
18. A contraceptive as claimed in claim 1, characterised in that the presence of the contraceptive is detected and partly quantified by measuring the residual magnetic field strength from outside the body.
19. A contraceptive as claimed in claims 1 or 18, characterised in that said external means include imaging by ultrasound, X-ray, CAT scan, MRI and scanning electrical impedance plethysmography.
20. An injectable reversible contraceptive as claimed in claims 1 to 19 and substantially described herein above.
23. A process for preparation of a contraceptive characterised by dissolving the weighed quantities of styrene maleic anhydride copolymer, styrene maleic acid

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copolymer, said electrically conducting material and said magnetic material in said solvent medium, preferably in dimethyl sulphoxide followed by keeping the complex solution of said copolymers, said electrically conducting material and said magnetic material in an inert environment, preferably in nitrogen atmosphere and shaking for about 45-50 hrs by maintaining the temperature at about 35°C.

24. A process for preparation of a contraceptive, as claimed in claim 23, wherein said magnetic material is preferably coated magnetic material.

25. A process for preparation of a contraceptive, as claimed in claim 23, wherein said copolymers, and said electrically conducting material and said magnetic material are first mixed and then dissolved in said solvent.

26. A process for preparation of a contraceptive, as claimed in claim 23, wherein said copolymers, and said electrically conducting material and said magnetic material are directly dissolved in said solvent followed by mixing.

27. A process for preparation of a contraceptive, as claimed in claim 23, wherein said copolymers are first mixed and then dissolved in said solvent followed by addition of said electrically conducting material and said magnetic material.

28. A process for preparation of a contraceptive, as claimed in claims 23 and 27, wherein said electrically conducting material and said magnetic material are added either together or one after the other.

29. A process for preparation of a contraceptive as claimed in claims 23 to 28 and substantially described herein above.